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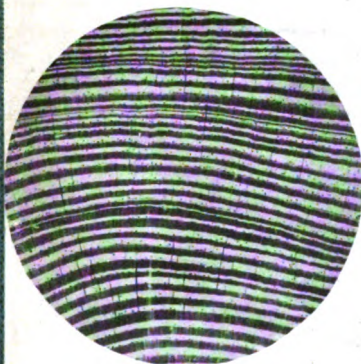
ON

Painting and Finishing Southern Yellow Pine

(EXTERIOR AND INTERIOR)

Presented before the Southern Pine Association
School of Lumber Salesmanship, St. Louis,
Missouri, June 27th, 1916

added, 1882 -
By HENRY A. GARDNER, Assistant Director
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Educational Bureau
of the Lumber Manufacturers Association of the U. S.
Philadelphia, Pa.

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PAINTING AND FINISHING SOUTHERN YELLOW PINE.

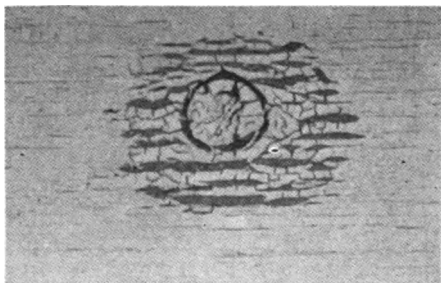
BY HENRY A. GARDNER

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GENERAL CONSIDERATIONS: The structural materials expert will admit that nearly all kinds of building materials (cement, iron, and wood) require that decoration or protection which is obtainable only through the use of paint. This is especially true of lumber, the painting of which is to be discussed herein. The advocates of this material advance as one of their arguments for its continued use the fact that frame dwellings are generally lower in cost than those made of other materials, and are therefore within the reach of the average person. They also refer to the highly decorative appearance of painted wooden houses, which will generally last for a hundred years or longer, provided a coat of paint is applied every five or six years. Such statements as to the durability of painted wood are founded upon fact, for tests have shown that moisture and fungi, the two most active agents of wood decay, are kept from wood by the sealing action of paint.

Lumber that has been well seasoned is, of course, in the most receptive condition for paint, as it allows deep penetration of the priming liquids which form the bonding coat. Moreover, on account of the volume changes which take place in every known species of structural wood,

Defects which may be observed on any type of lumber containing knots, unless properly painted. For methods of overcoming these troubles, see text.



Photograph showing effect of exterior painting over knots that have been coated with shellac. The shellac prevents the paint from penetrating the wood and forms a brittle surface coating that ultimately checks and cracks.



Photograph showing effect, after exposure, of applying heavy paint to knots that have not been treated. The hard resinous surface of the knots prevents admittance of the paint and the resin finally oozes out through the film.

the application of paint before seasoning is apt to result in a form of surface cracking that is objectionable. It is, however, bad practice to allow completed frame structures a very long period of seasoning before painting. The very purpose of applying paint to timber is to prevent the accumulation of dirt and to protect the wood from the destroying fungi that assert their presence in the form of deep-seated stains. It is advisable, therefore, to apply a thin priming coat and a medium body coat of paint to all wooden structures soon after erection. If these coats are thin, well brushed out, and allowed sufficient time to dry, the wood will be coated with a film possessing what might be referred to as valve action. Moisture from the outside will be denied ready entrance, but moisture in the wood will be allowed to escape freely during dry weather. The action of the sun will, moreover, bring to the surface, without causing bad effects, any resin or sap which might be present in the surface of the wood. Exposure over the summer months will generally be found sufficient to weather out all of the objectionable contents of the lumber. It should then receive preferably two more coats of paint.

EXTERIOR PAINTING.

Yellow Pine.

No paint or other finishing material should be applied in damp weather. The interior plaster work of a new structure should be allowed to dry thoroughly before applying paint to the exterior

of a building, as the water drawn out through the wood might cause blistering. The surface of the wood must be free from moisture. Weathering of the wood previous to the application of paint is generally advisable in order to allow thorough seasoning and drying out. If the wood has been previously painted, all old, loose paint should be removed with a wire brush. If the wood has not been previously painted, all knots and sap streaks should be brush-coated with turpentine not more than one hour previous to the application of the first coat of paint. (Never use shellac for coating knots.)

Priming Coat.—Never use ochre as a priming coat. Serious results are bound to follow. A high-grade prepared paint* made by a reputable manufacturer should be selected. Such paints should be prepared upon a lead and zinc base. To one gallon of paint there should be added

* *U. S. Army Paints.*

The majority of the high-grade paints to be purchased from reliable dealers will closely approximate the prepared paint called for by the specifications of the U. S. Army, which are as follows:

"The paint must be furnished in prepared form, ready for application. White paint must contain not less than 65 per cent nor more than 70 per cent of pigments, the balance to be liquids. The liquids shall consist of pure raw linseed oil, containing a total of not over 10 per cent of turpentine and turpentine drier. The pigment portion of the paint shall consist of white lead (basic carbonate or basic sulphate) and zinc oxide. There shall not be less than 25 per cent nor more than 50 per cent by weight of zinc oxide. Paints of this composition containing, in addition, not over 15 per cent by weight of such white pigments as barytes, china clay, whiting, asbestine, and silica will be accepted under these specifications. Tinted and colored paints must be of the same composition as the white, except for the tinting colors used, which must be pure and free from adulterants. Must be satisfactory in every respect, including body, fineness, working qualities, hiding power, gloss, drying, color, and durability. A gallon must contain 231 cubic inches at 70° F."

three pints of turpentine or benzol.* The thoroughly stirred mixture should then be applied, brushing it out into a thin coat. This will rapidly dry to a hard undercoating which is the secret of painting success. The paint will penetrate deeply into the wood and provide a substantial and permanent foundation for the subsequent coats.

Second and Third Coats.—When the priming coat is thoroughly dry, close all nail holes and other imperfections in the wood with a good grade of putty. This should be followed by the application of the second coat of paint, which may be used as it comes from the can in prepared form. If the paint is thought to be too heavy, a pint of turpentine to the gallon of paint may be used for thinning. After a suitable drying period, the third coat may be applied, as it comes from the can, without reduction. Better results will be obtained, however, if the two-coated job is allowed to weather over the summer months. The finishing coats may then be applied to the well-seasoned structure.

It should be remembered that the most durable results are obtained from tinted paints. Permanent colors which have been ground by machine into the lead and zinc paints have the effect of preventing painting defects and increasing the durability of the paint by thirty per cent.

If the property owner should desire to mix his paint by hand, which is not an economical pro-

* Benzol 90 degrees or Benzol 160 degrees (Solvent Naphtha) may be used with even better results than turpentine for thinning the priming coat of paint. Benzol is the water-white distillate from coal tar. It must not be confounded with benzine. When benzol is not obtainable, use turpentine.

cedure, he may obtain packages of white lead ground in oil and pure zinc oxide ground in oil. Mixtures of lead containing from 25 to 50 per cent of zinc are generally used.

INTERIOR PAINTING.

Yellow Pine.

Clean and sand-paper. Brush-coat knots and sappy spots with turpentine not more than one hour previous to the application of the first coat of paint. Select a high-grade prepared paint made by a reputable manufacturer upon a lead and zinc base. To one gallon of paint there should be added three pints of turpentine. The thoroughly stirred mixture should then be applied, brushing it out into a thin coat. This will rapidly dry to a hard undercoating that has penetrated deeply into the wood. If the finishing color is to be white or light tinted, there should be applied over the priming coat of paint a thin coat of white shellac. This will prevent discoloration of the surface by resin in the wood. After drying, the imperfections may be puttied up. There should then be applied three coats of paint of the desired color. If a varnish coat is applied over the paint, it should be a light-colored, good-wearing varnish, evenly applied, and it should be colored with the finishing tint.

ENAMELING.

Yellow Pine.

For enameling, the same treatment of knots, priming with paint, coating with shellac, and put-

tying should be adopted. Apply three coats of white prepared paint or flat finish. Then apply one coat of half paint and half enamel. Finish with one full-flowing coat of best enamel. Each coat must be thoroughly dry, and should be lightly sand-papered before the application of another. All coats should be tinted as desired. The enamel coats may be rubbed with water and powdered pumice stone if a satin finish is desired.

STAINING AND VARNISHING.

Yellow Pine.

Natural Finish.—The woodwork should be thoroughly cleaned and sand-papered where necessary. Apply one coat of white shellac.

Cover all nail holes and other imperfections with putty colored to match the wood, taking care to remove surplus putty.

Give two coats of good wearing body varnish, the last coat to be evenly flowed on. Sandpaper thoroughly between coats. If a flat finish is desired, the varnish coats may be rubbed—not too closely—to a dull, even finish, or a dull-finish varnish may be used. If the natural color of the wood is a trifle too bright for the effect desired, a very little burnt sienna added to the first coat of varnish will produce a more suitable finish.

Stained Work.—All woodwork should be thoroughly cleaned and free from imperfections. Apply one coat of linseed oil prepared stain containing benzol. Sandpaper lightly. Close nail holes with putty to match stain, removing all excess putty. Apply two good coats of strong wearing body varnish, evenly flowed on, and sand-

paper lightly between coats, taking care that each coat is thoroughly dry before another is applied. For a flat surface rub lightly with oil and pumice stone or apply one coat of flat varnish.

FINISHING FLOORS.

Yellow Pine.

Natural Color Finish.—Never lay a Southern yellow-pine floor until the plastering of the building is on and thoroughly dry. Floors should be cleaned, smoothed, hand-scraped, and sand-papered with the grain of the wood, and left in perfect condition to receive the work of the painter, the same as any other high-class hardwood floor.

Apply a very thin first coat of white shellac. Sand lightly with fine sandpaper, and apply two coats of best elastic floor varnish. If a dull finish is desired, rub lightly with oil and pumice stone. Wax varnished surface if desired.

Stained Floors.—If the floor is to be stained, omit the shellac and apply one coat of linseed oil prepared stain containing benzol. When dry, apply two coats of best elastic floor varnish. Wax if desired.

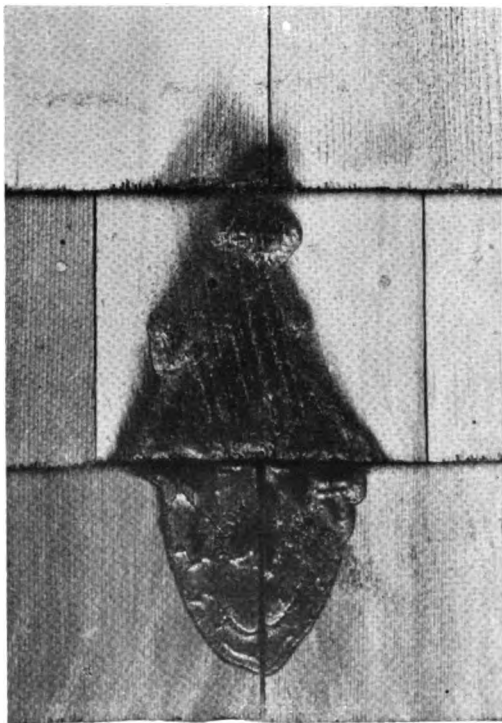
Do not attempt to finish a Southern yellow-pine floor by the use of wax or oil alone. A polished surface will result, but it will not be hard, and will soon discolor with dust and dirt.

PAINTING SHINGLE ROOFS.

Yellow Pine.

New shingles, if well seasoned, may be dipped in a prepared mineral paint that has been suitably

thinned with turpentine or mineral spirits so that the excess paint will readily run off, leaving an even film. It is customary, however, to paint shingles on the roof. This is usually done after the shingles have weathered for a short period of



Photograph showing the effect of a hot torch on a shingle roof unpainted.

time, but previous to the formation of corner pockets or other defects due to the action of the weather. The paint should be well brushed in. One coat is sufficient, but two coats will give a more durable job. Shingles 4 inches in width are usually laid to show not over $4\frac{1}{2}$ inches of their



Photograph showing the effect of the same torch on a painted shingle roof.

length of 16 inches, thus forming a quadruple roof of approximately 100 square feet to a thousand shingles. One gallon of prepared shingle paint will cover 400 square feet, one coat, if well brushed out.

Shingle Paints and Fire Resistants.—From time to time one sees in lumber journals or other papers the account of a test of some so-called fireproof paint. There is usually shown a photograph of two or three small shacks from which flames and dense clouds of smoke are issuing. One shack is usually so constructed or treated that it is apparently unaffected by the fire, presumably on account of the remarkable paint in question. Whenever such advertising matter is accompanied by the statement that the paint which gave the good results is "fireproof," the reader should be careful about accepting such claims, for, in the writer's opinion, there is no durable exterior fireproof paint in existence.

The use of a good grade of linseed oil-mineral pigment paint will make lumber resistant to flame and the action of hot cinders. Such paints, however, are not fireproof, but simply "fire-retardant" or "fire-resisting." For exterior use upon dwellings, they constitute the only type that it is possible to use with economical results. The incorporation of small percentages of certain salts and metallic compounds (borates, etc.), into such paints may slightly increase their value as fire-retardants, but will never make them fireproofers of wood. It is true, nevertheless, that many fires have been prevented through their use, especially roof fires. It is, therefore, a growing custom for

the property owner to paint the roof as well as the siding of his home. Shingle roofs, properly painted with a good mineral paint, have the following advantages: LIGHT WEIGHT—LOW COST—LONG LIFE—MOISTURE PROOF—FIRE RESISTANT—DURABLE—ORNAMENTAL.

